

August 22, 1951.

Dr. O. E. Bolduan,
PB Division, Chemical Corps,
Camp Detrick,
Frederick, Maryland.

Dear Dr. Bolduan:

I must apologize for having been so tardy in returning the assembly for the molecular filters. However, I did not return myself to Madison until a month after I saw you, and we have been delayed by various dislocations until now. The assembly has been mailed to you under separate cover.

Our conclusions are somewhat indefinite, and I hope we will have an opportunity to verify them when the filters become more readily available. In general, the filter proved to be roughly equivalent to the 14-lb. test Mandler in retention of bacteria, except, of course, in speed of filtration. We found it impractical to sterilize with ~~EtOH~~ with facilities immediately available, and resorted to immersing the assembled filter in boiling water. This worked reasonably well, except that re-use of a filter was impractical.

Ordinary cultures of Salmonella typhimurium and Serratia marcescens were retained. In our cleanest experiment, the molecular filter retained a phage-treated culture of Salmonella, which ~~was~~ permeated our Mandler filter. In another experiment, the molecular filter also passed a few cells (or "L-forms?") of phage-treated Salmonella. Until this question is cleared up, I think that some reservation should be entertained about the absolute bacterial sterility of "molecular filtrates", but under most conditions, complete retention is very likely, and at worst, only a very ~~small~~ small proportion of cells is likely to pass, even from cultures expressly treated to encourage their filtrability.

If the filters do appear on the market, I hope it will be possible to arrange to have them sterilized at the plant. I would appreciate any recent information on their commercial ~~and~~ availability, and barring that, a copy of the working drawings for the assembly.

Yours sincerely,

Joshua Lederberg,
Technical Representative
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